

What is claimed is:

1. An apparatus for preparing a surface with a surface preparation device, the apparatus comprising:
 - a mount that supports the surface preparation device;
 - a platform; and
 - a suspension system that applies a force pressing the mount towards the surface, the suspension system being disposed between the mount and the platform, the suspension system being operable to position the surface preparation device in contact with the surface.
2. The apparatus according to claim 1, wherein the suspension system further comprises:
 - an armature for substantially spanning a distance between the platform and the surface;
 - and
 - an actuator for providing the controlled amount of force.
3. The apparatus according to claim 2, wherein the actuator is a pneumatic cylinder.
4. The apparatus according to claim 3, further comprising a regulator for controlling the amount of force provided by the pneumatic cylinder.
5. The apparatus according to claim 1, wherein the mount is configured to allow the surface preparation device to follow a contour of the surface.
6. The apparatus according to claim 5, wherein the mount is gimbaled.

7. The apparatus according to claim 1, wherein the platform is mobile.
8. The apparatus according to claim 7, further comprising:
a plurality of wheels attached to the platform, the plurality of wheels being configured to facilitate moving the apparatus.
9. The apparatus according to claim 8, further comprising:
a motor attached to at least one of the plurality of wheels and configured to propel the platform by rotating the at least one wheel.
10. The apparatus according to claim 9, wherein the motor is pneumatically powered.
11. The apparatus according to claim 8, further comprising:
a steering linkage configured to control the rotational plane of at least one wheel of the plurality of wheels.
12. The apparatus according to claim 11, wherein the steering linkage is modulated pneumatically.

13. An apparatus for preparing a surface above a floor with a surfacing device, the apparatus comprising:

means for modulating a height of the surfacing device in response to a change in a height of the surface relative to the floor;

means for following a contour of the surface with the surfacing device; and

means for controlling an amount of force exerted by the surfacing device upon the surface.

14. The apparatus according to claim 13, further comprising:

means for actively following the contour of the surface in response to a computer readable representation of the contour of the surface.

15. The apparatus according to claim 13, further comprising:

means for sensing the contour of the surface; and

means for actively following the contour of the surface in response to the sensed contour of the surface.

16. The apparatus according to claim 13, further comprising:

means for following the contour of the surface in response to the surfacing device contacting the surface.

17. The apparatus according to claim 13, further comprising:

means for modifying the surfacing device for a surfacing task.

18. The apparatus according to claim 17, further comprising:
means for replacing the surfacing device with a second surfacing device for the surfacing task.
19. The apparatus according to claim 17, further comprising:
means for replacing a first surfacing medium of the surfacing device with a second surfacing medium for the surfacing task.
20. The apparatus according to claim 17, further comprising:
means for replacing a first surfacing medium of the surfacing device with a second surfacing medium in response to the first surfacing medium being worn.
21. The apparatus according to claim 13, further comprising:
means for pneumatically power modulating the height of the surfacing device in response to the change in the height of the surface above the floor.
22. The apparatus according to claim 13, further comprising:
means for pneumatically controlling the amount of force exerted by the surfacing device upon the surface.
23. The apparatus according to claim 13, further comprising:
means for moving the surfacing device relative to the surface.

24. The apparatus according to claim 23, further comprising:
means for pneumatically moving the surfacing device relative to the surface.
25. A method of preparing a surface above a floor with a surfacing device, the method comprising:
modulating a height of the surfacing device in response to a change in a height of the surface above the floor;
following a contour of the surface with the surfacing device; and
controlling an amount of force exerted by the surfacing device upon the surface.
26. The method according to claim 25, further comprising:
actively following the contour of the surface in response to a computer readable representation of the contour of the surface.
27. The method according to claim 25, further comprising:
sensing the contour of the surface; and
actively following the contour of the surface in response to the sensed contour of the surface.
28. The method according to claim 25, further comprising:
passively following the contour of the surface in response to the surface being moved relative to the surfacing device.

29. The method according to claim 25, further comprising:
modifying the surfacing device for a surfacing task.
30. The method according to claim 29, further comprising:
replacing the surfacing device with a second surfacing device for the surfacing task.
31. The method according to claim 29, further comprising:
replacing a first surfacing medium of the surfacing device with a second surfacing medium for the surfacing task.
32. The method according to claim 29, further comprising:
replacing a first surfacing medium of the surfacing device with a second surfacing medium in response to the first surfacing medium being worn.
33. The method according to claim 25, further comprising:
pneumatically power modulating the height of the surfacing device in response to the change in the height of the surface above the floor.
34. The method according to claim 25, further comprising:
pneumatically controlling the amount of force exerted by the surfacing device upon the surface.
35. The method according to claim 25, further comprising:
moving the surfacing device relative to the surface.

36. The method according to claim 35, further comprising:
pneumatically moving the surfacing device relative to the surface.
37. A method of preparing a surface above a floor with a surfacing device, the method comprising:
modulating a height of the surfacing device with a suspension system in response to a change in a height of the surface above the floor;
following a contour of the surface with the surfacing device; and
controlling an amount of force exerted by the surfacing device upon the surface with the suspension system.
38. The method according to claim 37, further comprising:
pneumatically powering the suspension system.
39. The method according to claim 37, further comprising:
moving the surfacing device relative to the surface with a mobile platform.
40. The method according to claim 39, further comprising:
powering the mobile platform for powered movement.